

195631



REMEDIAL ACTION WORKPLAN

For Property Located at:

**26 St. Charles Street
Newark, NJ**

Prepared For:

**Tidewater Baling
Newark, NJ**

February 28, 1995

Submitted by:

**Environmental Waste Management Associates, Inc.
P.O. Box 648
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EWMA Case No. 92036**

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PART I - REMEDIAL ACTION WORKPLAN

1.0) INTRODUCTION

Environmental Waste Management Associates, Inc. (EWMA) has been retained by Tidewater Baling Corporation (TWB) to draft the following Remedial Action Workplan (RAWP) for the TWB site. The RAWP includes EWMA's proposed plan for remediating previously identified areas of concern to the cleanup criteria set forth by the New Jersey Department of Environmental Protection (NJDEP). TWB is located at 26 St. Charles Street, Newark, Essex County, New Jersey, and is currently operating a scrap metal crushing and baling facility. The site occupies approximately 2.5 acres. The RAWP is based on the summarized findings of the Remedial Investigation previously performed by EWMA (April 4, 1994) and approved by the NJDEP on December 1, 1992. A Revised Remedial Investigation Report was conditionally approved on June 27, 1994.

This document will address the following areas of concern pertaining to the remedial activities proposed for the subject property:

- 1) Remediation of soils contaminated with heavy oils, PCBs, and possibly priority pollutant metals.
- 2) Removal of soil pile located adjacent to the subject property and behind the scoreboard on the Ironbound Stadium property.

1.1) Site Geology

The site is located within the Glaciated Piedmont Physiographic Province of New Jersey. A review of the *Engineering Soil Survey of New Jersey (Report No. 2 - Essex County)* prepared by Rutgers University - New Brunswick, New Jersey, a Joint Highway Research Project of the Bureau of Engineering Research and the New Jersey State Highway Department in cooperation with the Bureau of Public Roads, January, 1951, indicates that the site is overlain by soil mapped as GO 12i which is composed of non-residual materials (stratified drift or more specifically, glacial outwash) deposited by melt-waters during the Wisconsin glaciation. Soils are characterized as assorted and relatively homogenous, predominantly sand-sized grains with varying amounts of silt and gravel.

Gravel often occurs as layers or beds of varying thickness and extent. The soil type includes silty sands, silty gravels, sand-gravels, and gravelly sands. The Brunswick Formation is the underlying bedrock in this area and is composed of soft red shale with sandstone beds.

The soil type GO 12ig indicates that drainage is imperfect. Estimated depth to the water table is 6 to 10 feet below surface grade. Based on the Engineering Soil Map and the U.S. Geological Survey Map of New Jersey, prior to land reclamation projects, the Newark Bay boundary was approximately half a mile southeast of the site.

The Passaic River is located approximately 2,000 feet north of the site. Topography gently slopes to the southeast generally in the direction of low lying areas leading to Newark Bay.

The soils encountered during EWMA's RI sampling activities are as follows: mostly black fine sand, some silt, some gravel, and fill material from Tidewater's operation was observed from 0 to 4 feet below grade; cobblestones (belgian blocks) were encountered beneath the fill material at varying depths from 1.5 to 4 feet below grade; well graded, and fine to medium sand was observed from 4 to 7 feet below grade; and red-brown clay was observed from 7 to 11 feet below grade. Depth to ground water levels ranged from 3.6 feet in MW-3 to 16.6 feet in MW-2 below grade based on the March 31, 1993 ground water sampling event. Based on the June 23, 1993 ground water sampling event, groundwater levels ranged from 8 feet below grade in MW-3 to 16.9 feet below grade in MW-2.

2.0 SUMMARY OF AREAS OF CONCERN

A summary of the Remedial Investigation findings for the areas of concern which will be addressed in this document are as follows:

- 1) TWB has been performing metal scrapping, crushing, and baling operations on site since the late 1940's. Based on the nature of these operations, various contaminants may have been released to the surface soils on the site, and according to soil analysis results, there is evidence of release.

- 2) One operation included the compacting of metal parts in a crusher located on the eastern portion of the property and constructed below ground. Occasional releases of hydraulic oil from this system were pumped up and out of the concrete bunker which housed the crusher, and into a above ground storage tank (AST). The oil is suspected to be PCB containing oil since analysis of samples collected from the floor of this bunker indicated they contained PCB oils. Occasionally after oil and water had separated inside the AST, the oil was then be returned to the hydraulic system and the water discharged onto the uncapped soils of the site around the crusher. TWB also processed (scrapped) transformers on site. Historically, transformers are a known to have contained PCB containing dielectric oils in the past.
- 3) TWB also stores precrushed and crushed scrap metal on site along the sides of the property. Contaminated liquids stored in the scrap metal were often discharged to the ground surface. The types of metal being scrapped on site included automobiles, storage tanks, and transformers. The facility does not accept metal containers with hazardous materials inside.
- 4) In order to bale the crushed scrap metal, TWB also transported the crushed metal to a baler on the west side of the property. A permanent elevated crane carried this material across the middle of the property to the baler, potentially discharging any liquids released by the crushing of the metal (i.e. oil tanks, engine blocks, transformer oil containers). The crane is now out of service.
- 5) In order to determine the quality of the soils at the TWB site, test pits and soil borings were installed over most of the site, and soil samples were obtained from these locations. The sample depth, location and analytical results of these samples are included in tabular form on Figure 1-Remedial Action Location Plan. Analytical results of soil samples indicate that petroleum hydrocarbon concentrations are over the standard of 10,000 ppm in most of the samples obtained from the 0.0 to 3.0' interval. High petroleum hydrocarbon results indicates that oil was spilled on this soil. The laboratory analytical packages from which this data was obtained from were previously attached to the RIR and RRIR submittals to the NJDEP. They are not included here again, because the NJDEP has copies of the laboratory results.
- 6) The soil pile located behind the scoreboard on the Ironbound Stadium property has been previously identified as an area of concern. As part of this proposed remedial

action workplan, TWB will remove the soils located in this area and properly dispose of them at an approved soil disposal/recycling facility.

- 7) Analytical results of ground water sampling activities indicate that ground water has not been impacted by the operations on site, and do not require any remediation.

3.0) TECHNICAL OVERVIEW

The applicable remediation standards at the subject facility will consist of the NJDEP Non-Residential Direct Contact Cleanup standards. The Non-Residential standards will be utilized for the following reasons: 1) the site is a non-residential baling/scrap facility, and residential use is not anticipated in the future; 2) the surrounding area is non-residential, and no sensitive receptors have been identified in the vicinity of the site; 3) the cost to remediate to residential standards would be prohibitive. Based on the results of previous delineation activities as documented in the previously submitted Revised Remedial Investigation Report, the costs would at least triple the cost of the proposed remediation to non-residential standards. The proposed remediation is based upon the known area and depth of contamination, the feasibility of available technologies for remediation of heavy oils possibly with some PCBs in soil, and the case-specific budgetary and space constraints.

3.1) Soil Remediation

EWMA proposes to remediate the subject property by excavating contaminated soils on site and disposing of them at an approved facility. Soils identified in the RIR by test pit and boring activities indicate that approximately 2,000 tons of soil from the area of the test pits will need to be excavated and disposed of at an appropriate facility. EWMA will supervise the excavation of soil by track hoe, and field screen excavated soils with a photoionization detector (PID) calibrated to isopropylene, as well as using field observations and previously delineated sampling results areas to determine contaminated soils.

Post-excavation soil sampling will be performed in accordance with NJAC 7:26E-6.4. Specifically, since this is a surficial spill, one (1) sample will be obtained from the bottom of each side wall for every 30.0 linear feet of side wall as well as one (1) sample from every 900 square feet of bottom area. Excavation bottom samples will be obtained from the 0 to 6" interval below grade, except in the case where the previously noted belgian

block is encountered, which has been determined to act as a barrier to contaminant migration. Sample location and depth will be biased towards the highest contamination identified as a result of the remedial investigation. An estimated 45 post excavation soil samples will be obtained to demonstrate that all of the contaminated soils have been excavated. This is an estimate based on the anticipated extent of the excavation in accordance with the previously delineated contaminants. Post excavation soil samples will be analyzed for TPHC and priority pollutant metals (PP metals) since these contaminants were found in concentrations over the NJDEP Soil Cleanup Criteria (last revised February 3, 1994) in test pits and soil borings during the RI phase. Due to the large area proposed to be excavated, the total number of samples may be reduced in accordance with NJAC 7:26E-1.6. However, since the validity of the PCB samples has been questioned by the NJDEP, PCB samples will be obtained in areas suspected to contain PCBs.

All sampling activities will be performed in accordance with the methods set forth in the NJDEP Field Sampling Procedures Manual as well as the Technical Requirements for Site Remediation (NJAC 7:26E et seq.) This includes but is not limited to utilizing dedicated field sampling equipment and transporting samples in Teflon sealed, amber glass jars at 4° Celsius. Certain quality assurance and quality control practices will also be performed during sampling activities in order to provide assurance that sample integrity is not compromised.

3.2) Scoreboard Soil Pile

The soil pile located behind the Ironbound Stadium scoreboard will be removed and disposed of as part of this remedial action workplan. Specifically, a sample obtained from the soil pile has been analyzed for full TCLP waste class identification. The soil will be removed during the removal and disposal activities of excavated soils on the subject property as discussed in 3.1 above. Soils will be disposed of at an approved disposal facility.

3.3) Required Permits

Since a surface area greater than 5,000 square feet will be disturbed, a soil erosion permit may be required. TWB will investigate and file the required plans and applications for a soil erosion permit.

3.4 Site Restoration Plans:

Following excavation of contaminated soils, the excavated areas will be backfilled with clean fill material to restore site grade. It is planned that the soil will be excavated and placed directly onto trucks, with no stockpiling taking place on site. This will minimize the disturbance of the site and avoid any need for specialized erosion control due to the presence of a large stockpile.

4.0) EFFECTIVENESS AND RELIABILITY OF REMEDIAL ACTION

EWMA suggests that the proposed method of remediation is the only effective and reliable method of correcting existing site conditions. Soil excavation and disposal off site is a permanent solution to remediating the contaminated soils on site. Since TWB has been discharging separated water to 55-gallon drums and is properly disposing of them, the release problem from the AST is remedied. Also, TWB has discontinued its practice of accepting metal vessels containing contaminated materials. Given these new housekeeping practices by TWB on site, it is clear that no new contamination will be introduced to the site and will not negatively affect the quality of the clean fill which will replace the contaminated soils.

The proposed site remediation plan involves no long term remediation systems, nor does it require a costly maintenance program. It is a simple solution to a large but simple surficial spill problem. The excavation of soils is a completely thorough method of contamination removal, because contaminants and the soil they adhere to are simultaneously being removed, guaranteeing that all contaminated material is removed. Also, performing post excavation soil sampling ensures that the area of contamination is fully delineated and remediated to the applicable non-residential cleanup standard. The method can be performed as soon as the approval is given and does not require system construction, pilot tests, or bench studies, and the project may be completed in a few months rather than several years.

5.0) IDENTIFICATION OF LEGAL AND TECHNICAL OBSTACLES

TWB does not anticipate any legal or technical obstacles to implementing the proposed remediation plan. EWMA will require unrestricted access to any designated contaminated areas in order to excavate contaminated soil. Because many of the affected areas are often covered by scrap metal, there may not be enough lot space to move all

stored scrap metal as well as any temporary soil piles to known uncontaminated areas on site. Therefore, EWMA proposes that a schedule for clearing those areas for a given window of time will be implemented. During these windows of time that an affected area is vacant, EWMA will perform the proposed excavating and post excavation soil sampling. When remediation for the affected area is complete, EWMA will designate the area remediated, and allow TWB to redistribute the scrap metal so that the next treatment area is made vacant.

6.0) REMEDY COST COMPARISON

The proposed method of remediation (soil excavation and disposal off site) will incur an estimated cost of approximately \$250,000.00 to fully remediate the subject property. An approximate breakdown of these costs is as follows:

Soil removal and disposal	\$160,000.00
Post excavation sampling and analysis	\$20,000.00
Backfilling excavation	\$30,000.00
Excavation/Loading	\$12,500.00
<u>Professional Services</u>	<u>\$17,500.00</u>
ESTIMATED TOTAL	\$240,000.00

Due to the nature of the contaminants on site, which consist of heavy oils, possibly PCBs, and metals, there is no technologically and economically feasible alternative to excavating contaminated soils. A soil vapor extraction (SVE) system is effective for treating volatile organic soil contamination, but due to the low volatile nature of heavy oil in soil, as well as the presence of PCBs and metals, the system lacks the ability to sufficiently treat the soils which are found on the subject site. SVE systems require multiple well points, pilot studies, and air and water filtration systems. They also require constant monitoring and maintenance, at a substantial cost to the operator. The initial cost of implementing an SVE system to remediate highly volatile contaminated soils would be greater than \$250,000.00, and such a system would be incapable of effectively remediating the contaminants on site.

Similarly, in-situ bioremediation is generally not effective in treating heavy oils, metals, and PCBs in soils. A trickle down infiltration system with a collector and bioreactor would cost well in excess of \$300,000.00 to design and set up, and would not be able to effectively remediate all of the contaminants encountered at the site. Ex-situ bio-

remediation while somewhat less expensive, would still not effectively remediate the entire range of contaminants, and is not feasible due to space constraints.

The TWB site is affected by a large surficial spill which extends over a substantial portion of the property, but is limited to 6.0 feet or less in depth. In most areas on site, contamination does not reach below 2.0 to 3.0 feet below grade. All presently known affected areas on site are accessible to earth moving equipment. Therefore this site is proposed to be a candidate for soil excavation, which is the most cost effective option, as well as providing the only feasible permanent remedy.

7.0) SCHEDULE

TWB will schedule remediation activities at the site pending approval from the state of the RAWP. It is estimated that the excavation of soils on site will require one month of scheduling, excavating, and sampling. Soil sample analysis will require three to four weeks for normal turnaround time. Results of soil excavation activities will be included in a Remedial Action Report, which is anticipated to be submitted four months from the receipt of the RAWP approval.

8.0) HEALTH AND SAFETY PLAN:

This Health and Safety Plan has been developed by EWMA for the remedial activities to be conducted at the TWB site. The plan provides procedures for use by all personnel involved to minimize the potential for exposure to chemical contaminants and the potential for accidents from all other hazards that may be encountered. This site specific Health and Safety Plan will be in effect throughout the duration of the project. All personnel on site, regardless of the company they are employed through, are subject to the requirements of this plan.

8.1) Scope of Work

All operations will comply with the requirements of the Occupational Safety and Health Administration (OSHA) Safety and Health Regulations for Construction, 29 CFR 1926 Subpart C, General Safety and Health Provisions, and with the applicable requirements of OSHA Occupational Safety and Health Standards, 29 CFR 1910.

Work will be conducted in a safe and environmentally acceptable manner, and all personnel shall be required to comply with the health and safety requirements specified herein. All personnel participating in the UST removal and soil removal shall read and familiarize themselves with the contents of this plan and to document this activity through the entry of a signature and date on the attached Health and Safety Plan Review Form. Each person, including subcontractor personnel, must be able to demonstrate that he or she has undergone the appropriate training and medical monitoring and is fit to wear respiratory protection if respiratory protection is required. Copies of the approved Health and Safety Plan shall be maintained on-site during all field activities.

8.2) Site Characterization:

The site is an active ferrous and non-ferrous scrap metal baling facility. Based on previous site and remedial investigation activities, the site is known to have high levels of petroleum hydrocarbons in the exposed soil covering a majority of the property. PCB containing oils are suspected to be found in soils around the baler pit on the east side of the property. The site is an active site and requires that all visiting persons to the site be aware that heavy machinery such as a baler, a crusher, cranes, and tractor trailers are all in use on site.

8.3) Chain of Command:

In case of difficulties on site requiring notification of EWMA, the following are EWMA contacts listed in order of priority.

Environmental Waste Management Associates
P.O. Box 648, Wayne, New Jersey 07474
(201) 633-7900

Chris Langewisch, Senior Project Manager
(201) 633-7900 Extension 28

The Project Manager provides overall direction for the implementation of field activities in accordance with this plan. He is to monitor operations at the site and assure that work is conducted in a safe manner and the potential for exposures and accidents is minimized. Incident reports and questions are directed to this individual.

Peter Ficuciello, Staff Geologist
(201) 633-7900 Extension 52

The Geologist will perform as the field team leader by ensuring that field work is conducted in accordance with the approved Health and Safety Plan. He is authorized to call off work if adverse weather conditions affect the safety of field personnel. The Geologist is also authorized to direct any person to stop work if safety requirements are not being met. Resumption of work will require concurrence of the Project Manager.

Dr. Richard Greenberg, President EWMA
(201) 633-7900 Extension 15

The chain of command for this project is as follows:

Immediate job coordination problems will be directed to the attention of the project manager or geologist.

Problems relative to health and safety will be directed to the senior project manager or geologist.

Job progress meetings and problems requiring corporate coordination will be directed to Dr. Greenberg.

8.4) Known Hazards and Contaminants:

The following is a list of known contaminants on site:

Contaminant	Matrix
PCBs	soil
Petroleum Hydrocarbons	soil
Metals (As, Cu, Pb, Ni, Zn)	soil

Chemical Exposure

The targeted organic chemicals that are present in the soil at the site consist mainly of petroleum breakdown products.

* The ambient air monitoring devices used during this project will be calibrated with isobutylene, which shall simulate Benzene.

Physical Hazards

The potential for accidents exists whenever heavy equipment is in operation. Caution must be exercised when operating equipment and moving throughout the site. Any underground utilities must be identified prior to field work and care must be taken to avoid any overhead or underground structures.

8.5) Safety Precautions

Work Area

Work and support areas will be designated based on measured ambient air quality and proposed sampling locations.

Adequate safety instruction will be provided to all personnel on site. Restricted areas due to hazardous environmental conditions will be clearly posted. Care will be taken to insure that all work areas are contained.

Personnel will not be admitted on the site alone. All personnel will visit and work on the site in teams of two or more.

Personal Protective Equipment:

Protective clothing will be worn by all personnel on site. The site safety manager will predetermine the appropriate level of protection for personnel entering the work area.

Contractors will be responsible for providing their personnel with appropriate protective equipment.

Personnel Protection Requirements:

It is anticipated that level D protection will be adequate for the proposed work. Level D protection must be worn when contaminants are known to be within acceptable respiratory limits and there is no hazard from direct skin contact.

All personnel on site will be equipped with a standard work uniform, alternatively, a supply of Tyvek or Saranex Tyvek suits will be available in the personnel support area on site. In addition, personnel entering the work area must wear appropriate work boots, and disposable Tyvek boot coverings. Any personnel handling soil and or water must be equipped with nitrile gloves.

Personnel working with machinery including but not limited to drilling rigs and earth moving equipment must wear a hard-hat, and hearing protection.

Constant ambient air monitoring will be conducted with a HNU and/or Microtip. Should air contaminants be identified as above acceptable levels (above 5 ppm), personal protection will be upgraded to level C. Level C protection includes all apparel as required in level D protection plus approved full face, air purifying respirators (APR), and chemical resistant clothing and gloves.

Action Levels

All initial site activities will be performed in level D attire. Constant monitoring of ambient conditions will document presence of airborne contaminants. A background air reading will be recorded as a baseline for general environmental conditions.

If the levels detected are less than 5 ppm, level D protection will be continued. If the detectors indicate levels greater than 5 ppm above background conditions, level C protection will be implemented. Alternatively, level D protection may be continued if exposure is limited to less than fifteen minute intervals with at least sixty minutes between exposures.

Site Security:

The project supervisor will be responsible for maintaining adequate site security. Access to the site will be at the sole discretion of the site supervisor. Visitors will not be permitted to enter areas of known or suspected contamination.

The project supervisor will be responsible for securing all work areas prior to leaving the site each night. All areas of potential hazard will be fenced, flagged and posted.

Medical Services:

If a medical emergency occurs, limited first aid is available on site. If advanced medical aid is needed the local first aid squad will be called and transported by ambulance to one of the following hospitals:

Closest Hospital:

St. James Hospital
88th Street, Newark, NJ

Emergency Phone Numbers:

Police and Fire: 911

CERTIFICATIONS:

A. The following certification shall be signed by the highest ranking individual at the site with overall responsibility for that site or activity. Where there is no individual at the site with overall responsibility for that site or activity, this certification shall be signed by the individual having responsibility for the overall operation of the site or activity.

I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information, and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Typed/Printed Name ALAN SHAPIRO Title SEC.
Signature [Signature] Date 3/1/95
Sworn to and Subscribed Before Me

on this 1st

Date of March 19 95

[Signature] KRISTINE KRATTIGER
Notary NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES JUNE 10, 1997

B. The following certification shall be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official; or
4. For persons other than 1-3 above, by the person with the legal responsibility for the site.

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information, and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute I am personally liable for the penalties.

Typed/Printed Name ALAN SHAPIRO Title SEC.
Signature [Signature] Date 3/1/95
Sworn to and Subscribed Before Me

on this 1st

Date of March 19 95

[Signature] KRISTINE KRATTIGER
Notary NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES JUNE 10, 1997

Revision No: _____

Revision Date: _____